REMARKS

Applicant notes that in the Office Action Summary section, the examiner has made reference to a priority document. Since the priority document is a U.S. Provisional Patent application that served as the priority document for the PCT application, and was provided to the PCT IB, Applicant does not believe it is required to be submitted in this U.S. National Phase application. Withdrawal of this requirement, if one existed, is respectfully requested.

Reconsideration of the above identified application in view of this Amendment is respectfully requested. This Amendment is in response to the Office Action dated Nov. 16, 2006. By said Office Action, the Examiner stated the following detailed action items:

Items 1 - 2: claims 21 - 53 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Item 3: detailed explanation for Examiner's rejection of (independent method) claim 21, regarding claiming a non-tangible result, in view of USPTO Official Gazette Notice of 22 November 2005.

Item 4: detailed explanation for Examiner's rejection of (independent device) claim 52, regarding claiming a non-tangible result, in view of USPTO Official Gazette Notice of 22 November 2005.

Item 5: detailed explanation for Examiner's rejection of (dependent method) claims 22 - 51, and of (dependent device) claim 53, in view of Examiner Items 3 and 4, respectively.

Item 6: claim 54 is allowable.

Item 7: claim 92 is allowable.

Item 8: claims 21 - 53 would be allowable if amended to overcome applicable 35 U.S.C. 101 rejections above.

By this Amendment, the Applicant has amended (independent method) claim 21. Claims 22 - 92, remain as previously presented.

The Examiner is respectfully made aware that the US Patent Application Publication, to Moshe, having Pub. No.: US 2006/0033919 A1, and Pub. Date: Feb. 16, 2006, of the present U.S. Pat. Appl. No. 10/525,051, was used for preparing the present Amendment. Accordingly, Applicant's references to page and paragraph numbers correspond to those of the just stated publication of the present patent application document.

Briefly, the present invention relates to using electro-optics for inspecting and determining internal properties and characteristics of a longitudinally moving rod of material, and more particularly, to a method, and corresponding device, for electro-optically inspecting and determining internal properties and characteristics, such as density, structure, defects, and impurities, and variabilities thereof, of a longitudinally moving rod of material. The present invention also relates to a method, and corresponding device, for preventing, eliminating, or reducing, radially directed vibrating of a longitudinally moving rod of material during electro-optically inspecting the longitudinally moving rod of material. The rod of material is continuously or intermittently moving along its longitudinal axis while at least one focused beam of electromagnetic radiation is incident upon, measurably affected by, and transmitted through, volumetric segments of the longitudinally moving rod of material, along with detecting the transmitted electromagnetic radiation beam, during the electro-optical inspection process of measuring and analyzing the internal properties and characteristics of the longitudinally moving rod of material.

Prior to providing details of Applicant's response to the specific Examiner Items, regarding claims rejections under 35 U.S.C. 101 in view of the Examiner cited USPTO Official Gazette Notice of 22 November 2005, entitled: "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility", the Examiner is respectfully informed that the Applicant has carefully and fully reviewed the Examiner cited USPTO OG Notice.

The Applicant particularly reviewed section IV therein [entitled: DETERMINE WHETHER THE CLAIMED INVENTION COMPLIES WITH THE SUBJECT MATTER ELIGIBILITY REQUIREMENT OF 35 U.S.C. SEC. 101], sub-section C. therein [entitled: Determine Whether the Claimed Invention Falls Within Sec. 101 Judicial Exceptions - Laws of Nature, Natural Phenomena and Abstract Ideas], sub-section 2.

therein [entitled: Determine Whether the Claimed Invention is a Practical Application of an Abstract Idea, Law of Nature, or Natural Phenomenon Sec. 101 Judicial Exceptions)], and sub-section b. therein [entitled: Practical Application That Produces a Useful, Concrete, and Tangible Result], and sub-sections therein [entitled: "(1) USEFUL RESULT", "(2) TANGIBLE RESULT", and "(3) CONCRETE RESULT"].

Regarding Examiner Item 3: rejection of (independent method) claim 21

In Examiner Item 3, the Examiner provided detailed explanation for rejection of (independent method) claim 21, regarding claiming a non-tangible result, in view of USPTO Official Gazette Notice of 22 November 2005. Relatedly, in Examiner Item 8, the Examiner stated that "claims 21 - 53 would be allowable if amended to overcome applicable 35 U.S.C. 101 rejections above".

By this Amendment, the Applicant has amended claim 21 by adding the subject matter of step (e) of the method to the recitation of claim 21. More specifically, the following subject matter:

"(e) processing and analyzing said focused beam of step (b), said incident focused beam of step (c), and said rod material detected volumetric segment transmitted beam of step (d), by a process control and data analysis unit, for determining the internal properties and characteristics of the longitudinally moving rod of material",

has been added to the recitation of claim 21, as indicated above.

Support for this amendment of claim 21 is clearly and literally found in the specification. Specifically, for example, therein, at least on page 9, paragraph [0073], wherein it is stated:

"A specific preferred embodiment of the generalized electro-optical inspection method, of the present invention, further includes step (e): processing and analyzing the focused beam of step (b), the incident focused beam of step (c), and the rod material detected volumetric segment transmitted beam of step (d), by a process control and data analysis unit, for determining the internal properties and characteristics, such as density, structure, defects, and impurities, and variabilities thereof, of the longitudinally moving rod of material".

Claim 21 was further amended as follows. Since recitation of the added subject matter of step (e) includes the phrase "for determining the internal properties and characteristics of the longitudinally moving rod of material", thereby clearly stating 'the

final result achieved by the invention claimed in (independent method) claim 21', which the Applicant firmly contends is "useful, tangible, and concrete", therefore, for improving conciseness and clarity, and reducing redundancy, of claim 21, at the end of the recitation of step (d), the phrase: "useable for determining the internal properties and characteristics of the longitudinally moving rod of material", was canceled.

By the preceding described amendment of claim 21, the Applicant fully believes, and firmly contends, that the subject matter of step (e), now included in the recitation of (independent method) claim 21, is definitely "sufficient to constitute a useful, concrete, and tangible result", since the outcome of the detecting step has been used in a disclosed practical application and has been made available (in the claim) in such a manner that its usefulness in a disclosed practical application can be realized, in full accordance with 35 U.S.C. 101, in view of USPTO Official Gazette Notice of 22 November 2005.

Accordingly, the Applicant believes that current amendment of claim 21 completely overcomes the Examiner's rejection based on grounds of 35 U.S.C. 101, regarding claiming a non-tangible result, in view of USPTO Official Gazette Notice of 22 November 2005. Thus, the Applicant believes that (currently amended) claim 21 is in allowable condition, and such action is respectfully requested.

Regarding Examiner Item 4: rejection of (independent method) claim 52

In Examiner Item 4, the Examiner provided detailed explanation for rejection of (independent method) claim 52, regarding claiming a non-tangible result, in view of USPTO Official Gazette Notice of 22 November 2005. Relatedly, in Examiner Item 8, the Examiner stated that "claims 21 - 53 would be allowable if amended to overcome applicable 35 U.S.C. 101 rejections above".

The Applicant respectfully traverses Examiner's rejection of (independent method) claim 52. In this particular instance, the Applicant respectfully believes that the Examiner's cited sections, and associated sub-sections therein, of the USPTO Official Gazette Notice of 22 November 2005, are not applicable as a basis for rejecting (independent method) claim 52 on grounds of 35 U.S.C. 101, regarding claiming a non-tangible result, or regarding claimed subject matter which is insufficient to constitute a useful, concrete, and tangible result.

The Applicant firmly and strongly believes and contends that the present (non-amended) recitation of (independent method) claim 52 includes subject matter which

is clearly sufficient to constitute a useful, concrete, and tangible result, since the outcome of the generating step, combined with the immediately following recitation of the 'whereby' clause (i.e., "whereby said flowing gas radially impinging upon the longitudinally moving rod of material prevents, eliminates, or reduces, radially directed vibrating of the longitudinally moving rod of material during the electro-optically inspecting the longitudinally moving rod of material"), has been used in a disclosed practical application and has been made available (in the claim) in such a manner that its usefulness in a disclosed practical application can be realized, in full accordance with 35 U.S.C. 101, in view of USPTO Official Gazette Notice of 22 November 2005.

Per Examiner's request, the Applicant has determined, and firmly and strongly believes and contends, that recitation of the invention claimed in (independent method) claim 52 does indeed fully comply with the subject matter eligibility requirement of 35 U.S.C. 101, in view of the Examiner's cited sections, and sub-sections therein, in USPTO Official Gazette Notice of 22 November 2005. More specifically, for making this determination, the Applicant carefully reviewed the recitation of the subject matter of the invention claimed in (independent method) claim 52, in view of USPTO Official Gazette Notice of 22 November 2005, section IV therein, sub-section C. therein, sub-section 2. therein, and sub-section b. therein [entitled: Practical Application That Produces a Useful, Concrete, and Tangible Result], particularly with reference to sentence 3, which states: "In determining whether the claim is for a "practical application", the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete".

The Applicant respectfully reminds the Examiner that (independent method) claim 52 is directed to, and focused on, "A method for preventing, eliminating, or reducing, radially directed vibrating of a longitudinally moving rod of material during electro-optically inspecting the longitudinally moving rod of material". The final result achieved by performing steps (a) and (b) of claim 52 is clearly, precisely, and succinctly, stated in the 'whereby' clause, i.e., "whereby said flowing gas radially impinging upon the longitudinally moving rod of material prevents, eliminates, or reduces, radially directed vibrating of the longitudinally moving rod of material during the electro-optically inspecting the longitudinally moving rod of material". The Applicant has determined, and firmly and strongly believes and contends, that such final result achieved by the invention claimed in claim 52 is definitely "useful, tangible and concrete", and therefore, the invention claimed in claim 52 is definitely for a "practical application".

For further understanding the Applicant's preceding determination, and, firm and strong contention, the Applicant respectfully directs the Examiner's attention to the USPTO Official Gazette Notice of 22 November 2005, section IV therein, sub-section C. therein, sub-section 2. therein, and sub-section b. therein [entitled: Practical Application That Produces a Useful, Concrete, and Tangible Res ult], particularly with reference to the sub-section therein, beginning with the sentence "In determining whether a claim provides a practical application that produces a useful, tangible, and concrete result, the examiner should consider and weigh the following factors:", and sub-sections therein [entitled: "(1) USEFUL RESULT", "(2) TANGIBLE RESULT", and "(3) CONCRETE RESULT"].

Regarding "(1) USEFUL RESULT"

In this sub-section of the USPTO OG Notice of 22 November 2005, it is stated: "For an invention to be "useful" it must satisfy the utility requirement of section 101. The USPTO's official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible."

The Applicant firmly and strongly believes and contends that recitation of (independent method) claim 52, directed to, and focused on, "A method for preventing, eliminating, or reducing, radially directed vibrating of a longitudinally moving rod of material during electro-optically inspecting the longitudinally moving rod of material", clearly and literally satisfies the utility requirement of section 101, in that the utility of the claimed invention is "(i) specific, (ii) substantial and (iii) credible."

Additionally, in this sub-section of the USPTO OG Notice of 22 November 2005, it is further stated: "In addition, when the examiner has reason to believe that the claim is not for a practical application that produces a useful result, the claim should be rejected, thus requiring the applicant to distinguish the claim from the three Sec. 101 judicial exceptions to patentable subject matter by specifically reciting in the claim the practical application."

The Applicant firmly and strongly believes and contends that recitation of (independent method) claim 52 is definitely for "a practical application that produces a useful result", which is clearly and readily distinguishable "from the three Sec. 101 judicial exceptions (i.e., Laws of Nature, Natural Phenomena and Abstract Ideas) to patentable subject matter by specifically reciting in the claim the practical application".

Regarding "practical application" of the invention claimed in (independent method) claim 52, the Applicant respectfully directs the Examiner to the following several exemplary relevant sections of the specification:

In the specification, in the 'FIELD AND BACKGROUND OF THE INVENTION' section, on page 4, paragraph [0024], wherein it is stated:

"Another significant limitation existing in the prior art of electro-optically inspecting a longitudinally moving rod of material, regards the undesirable affect that **radially directed vibrating** of the longitudinally moving rod of material, in general, and of the electro-optically inspected section of the longitudinally moving rod of material, in particular, during the electro-optical inspection process, may have on accuracy and precision of the results obtained from the electro-optical inspection process. While electro-optically inspecting a longitudinally moving rod of material, the longitudinally moving rod of material, in general, and the electro-optically inspected section of the longitudinally moving rod of material, in particular, **typically vibrates, particularly, in the radial direction**. Magnitudes of such **radially directed vibrating** may be sufficiently large so as to significantly increase noise and error levels during the illumination and detection processes, which may translate to meaningful decreases in accuracy and precision of the results obtained from the electro-optical inspection process."

In the specification, in the 'SUMMARY OF THE INVENTION' section, on page 5, paragraph [0033], wherein it is stated:

"The present invention is directed to commercial applications requiring real time, non-invasive, high speed, high sensitivity, low noise, high accuracy, high precision, temperature compensative, and **low vibration**, measuring and analyzing of internal properties and characteristics of a longitudinally moving rod of material, as the rod of material is transported or conveyed during a commercial manufacturing sequence, particularly a manufacturing sequence including quality control and/or quality assurance processes."

In the specification, in the 'DESCRIPTION OF THE PREFERRED EMBODIMENTS' section, on page 9, paragraph [0072], wherein it is stated:

"For achieving even higher sensitivity, signal to noise ratios, accuracy, and precision, and therefore, overall performance, of steps (a) through (d) in the generalized electro-optical inspection method, preferably, a specific preferred embodiment of the generalized electro-optical inspection method further includes sub-steps and procedures, and components for performing thereof, for preventing, eliminating, or at least reducing, **radially directed vibrating** of the longitudinally moving rod of material, in general, and of the electro-optically inspected volumetric segment of the longitudinally moving rod of material, in particular, during the electro-optical inspection process."

In the specification, in the 'DESCRIPTION OF THE PREFERRED EMBODIMENTS' section, on page 30, paragraph [0243], wherein it is stated:

"In general, while electro-optically inspecting a longitudinally moving rod of material, the longitudinally moving rod of material, in general, and the electro-optically inspected section or segment of the longitudinally moving rod of material, in particular, typically vibrates, particularly, in the radial direction. For example, with respect to implementation of the electro-optical inspection method and device of the present invention, as illustratively described above, with reference to FIGS. 1 and 2, while electro-optically inspecting longitudinally moving rod of material **12**, longitudinally moving rod of material **12**, in general, and the electro-optically inspected volumetric segment (**34** in FIG. 1; **34a** and **34b**, respectively, in FIG. 2), in particular, typically vibrates, particularly, in the radial direction. With reference to reference XYZ coordinate system **50**, such radial vibrating occurs in the XY-plane of moving rod of material **12**. Magnitudes of such radially directed vibrating may be sufficiently large so as to significantly increase noise and error levels during the illumination and detection processes, which may translate to meaningful decreases in accuracy and precision of the results obtained from the electro-optical inspection process."

In the specification, in the 'DESCRIPTION OF THE PREFERRED EMBODIMENTS' section, on page 32, paragraph [0259], wherein it is stated:

"The above illustratively described vortex generating mechanism **130**, as part of operation of a rod guiding unit, for example, rod guiding unit **14** of the present invention, is generally applicable for preventing, eliminating, or reducing, radially directed vibrating of a longitudinally moving rod of material during electro-optically inspecting the longitudinally moving rod of material, and is not specifically limited to use only with the generalized electro-optical inspection method and the corresponding generalized electro-optical inspection device of the present invention. More specifically, the above illustratively described vortex generating mechanism **130**, is applicable for use with prior art electro-optical inspection methods, devices, and apparatuses."

Regarding the invention claimed in (independent method) claim 52 being a "practical application that produces a useful result" which is clearly and readily distinguishable "from the three Sec. 101 judicial exceptions (i.e., Laws of Nature, Natural Phenomena and Abstract Ideas) to patentable subject matter", the Applicant points out that as previously stated above, the final result achieved by performing steps (a) and (b) of claim 52 is clearly, precisely, and succinctly, stated in the 'whereby' clause, i.e., "whereby

said flowing gas radially impinging upon the longitudinally moving rod of material prevents, eliminates, or reduces, radially directed vibrating of the longitudinally moving rod of material during the electro-optically inspecting the longitudinally moving rod of material". Such final result is achieved by performing steps (a) and (b) of claim 52:

"(a) guiding the longitudinally moving rod of material along its longitudinal axis by a rod guiding unit, along an optical path within a transparent passageway, said optical path and said transparent passageway coaxially extend along said longitudinal axis of the longitudinally moving rod of material and pass through an electro-optical inspection apparatus used for electro-optically inspecting the longitudinally moving rod of material; and

(b) generating a continuous vortical type of flow of gas within and along said transparent passageway by a vortex generating mechanism, such that said flowing gas rotates as a vortex around said optical path and around the longitudinally moving rod of material, and flows downstream within and along said transparent passageway in same longitudinal direction of the longitudinally moving rod of material, such that said flowing gas radially impinges upon the longitudinally moving rod of material within said transparent passageway;".

It should be fully understood that recitation of (independent method) claim 52 includes no recitation of any of Sec. 101 Judicial Exceptions - Laws of Nature, Natural Phenomena and Abstract Ideas. Quite the contrary, (independent method) claim 52 recites a method based on, and involving, human / machine made, or human / machine initiated, actions and means, which are clearly not in and of themselves any of Sec. 101 Judicial Exceptions - Laws of Nature, Natural Phenomena and Abstract Ideas.

Regarding "(2) TANGIBLE RESULT"

In this sub-section of the USPTO OG Notice of 22 November 2005, it is stated: "The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a Sec. 101 judicial exception, in that the process claim must set forth a practical application of that Sec. 101 judicial exception to produce a real-world result."

The Applicant firmly and strongly believes and contends that the recitation of (independent method) claim 52, of a method based on, and involving, human / machine made, or human / machine initiated, actions and means, **recites significantly and far**

"more than a Sec. 101 judicial exception", and that the process (i.e., method) claim 52 clearly, precisely, and succinctly, sets forth a practical application, i.e., of "A method for preventing, eliminating, or reducing, radially directed vibrating of a longitudinally moving rod of material during electro-optically inspecting the longitudinally moving rod of material", to produce a real-world result, i.e., human / machine made, or human / machine initiated, "flowing gas radially impinging upon the longitudinally moving rod of material (which) prevents, eliminates, or reduces, radially directed vibrating of the longitudinally moving rod of material during the electro-optically inspecting the longitudinally moving rod of material".

Additionally, in this sub-section of the USPTO OG Notice of 22 November 2005, it is further stated: "("It is for the discovery or invention of some practical method or means of producing a beneficial result or effect, that a patent is granted . . ."). In other words, the opposite meaning of "tangible" is "abstract"."

The Applicant firmly and strongly believes and contends, that recitation of the invention claimed in (independent method) claim 52 corresponds to recitation "for the discovery or invention of some practical method or means of producing a beneficial result or effect", that is clearly and definitely "tangible", and, clearly and definitely not "abstract". More specifically, recitation of the invention claimed in (independent method) claim 52 corresponds to recitation "for the discovery or invention of some practical method or means", i.e., steps (a) and (b), "of producing a beneficial result or effect", i.e., human / machine made, or human / machine initiated, "flowing gas radially impinging upon the longitudinally moving rod of material (which) prevents, eliminates, or reduces, radially directed vibrating of the longitudinally moving rod of material during the electro-optically inspecting the longitudinally moving rod of material", that is clearly and definitely "tangible", and, clearly and definitely not "abstract".

Regarding "(3) CONCRETE RESULT"

In this sub-section of the USPTO OG Notice of 22 November 2005, it is stated: "Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. In other words, the process must have a result that can be substantially repeatable or the process must substantially produce the same result again." Therein, it is further stated: "The opposite of "concrete" is unrepeatable or unpredictable."

The Applicant firmly and strongly believes and contends that (independent method) claim 52 recites an invention which produces a "concrete result", as clearly, precisely, and

succinctly, stated in the 'whereby' clause, i.e., "whereby said flowing gas radially impinging upon the longitudinally moving rod of material prevents, eliminates, or reduces, radially directed vibrating of the longitudinally moving rod of material during the electro-optically inspecting the longitudinally moving rod of material", wherein the result of the recited invention can be assured, and wherein the result can be substantially repeatable or the process (method) can substantially produce the same result again. Additionally, the Applicant firmly and strongly believes and contends, that (independent method) claim 52 recites an invention which produces a "concrete result", that is clearly and definitely repeatable or predictable, and, clearly and definitely not "unrepeatable or unpredictable". The Applicant respectfully informs the Examiner that the "concrete result" of (independent method) claim 52 does not correspond to a 'chance result' obtained only by chance or accident, or obtained only once in a while, but rather corresponds to a "concrete result" obtained by a human or/and machine performing steps (a) and (b) in a methodical and intentional manner which is repeatable or predictable.

Furthermore, regarding 35 U.S.C. 101, in view of this sub-section of USPTO OG Notice of 22 November 2005, the Applicant firmly and strongly believes and contends, that (independent method) claim 52 recites an invention which is fully enabled by the illustrative description set forth in the specification, for one of ordinary skill in the art of the invention to implement "as intended without undue experimentation", in full accordance with 35 U.S.C. 112, first paragraph.

Accordingly, the Applicant believes that the preceding discussion proves that the present (non-amended) recitation of (independent method) claim 52 includes subject matter which is clearly sufficient to constitute a useful, concrete, and tangible result, and therefore, completely overcomes the Examiner's rejection based on grounds of 35 U.S.C. 101, regarding claiming a non-tangible result, in view of USPTO Official Gazette Notice of 22 November 2005. Thus, the Applicant believes that (previously presented) claim 52 is in allowable condition, and such action is respectfully requested.

Regarding Examiner Item 5: rejection of (dependent method) claims 22 - 51, and of (dependent device) claim 53

In Examiner Item 5, the Examiner provided detailed explanation for Examiner's rejection of (dependent method) claims 22 - 51, and of (dependent device) claim 53, in view of Examiner Items 3 (regarding independent method claim 1) and 4 (regarding independent device claim 52), respectively. Relatedly, in Examiner Item 8, the Examiner

stated that "claims 21 - 53 would be allowable if amended to overcome applicable 35 U.S.C. 101 rejections above".

In view of the hereinabove Applicant's discussion regarding Examiner Item 3, for overcoming the Examiner's rejection of (independent method) claim 21 based on grounds of 35 U.S.C. 101, the Applicant submits that since (currently amended) (independent method) claim 21 is in allowable condition, therefore, (previously presented) claims 22 - 51, depending therefrom, are in allowable condition, and such action is respectfully requested.

In view of the hereinabove Applicant's discussion regarding Examiner Item 4, for overcoming the Examiner's rejection of (independent method) claim 52 based on grounds of 35 U.S.C. 101, the Applicant submits that since (previously presented) (independent method) claim 52 is in allowable condition, therefore, (previously presented) claim 53, depending therefrom, is in allowable condition, and such action is respectfully requested.

Regarding Examiner Item 6: allowability of (independent device) claim 54

In Examiner Item 6, the Examiner stated that (independent device) "claim 54 is allowable".

Relatedly, in the Office Action Summary, Disposition of Claims section, (previously presented) claims 55 - 91, depending from (independent device) claim 54, are indicated as being allowable.

Regarding Examiner Item 7: allowability of (independent device) claim 92

In Examiner Item 7, the Examiner stated that (independent device) "claim 92 is allowable".

Relatedly, in the Office Action Summary, Disposition of Claims section, (previously presented) claim 93, depending from (independent device) claim 92, is indicated as being allowable.

By this Amendment, the Applicant respectfully submits that independent claims 21 and 52, and hence dependent claims 22 - 51, and, 53, respectively, are now in condition for allowance. Independent claims 54 and 92, and dependent claims 55 - 91, and 93, respectively, are in allowable condition.

In view of the foregoing, the Applicant submits that all the claims 1 - 93 now pending in the application are allowable. An early Notice of Allowance is therefore respectfully requested.

Respectfully submitted,

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Date: March 16, 2007

Enclosed:
Petition For Extension (1 Month).